## AMENDMENTS

IN THE CLAIMS

1. (Currently Amended) A method for analyzing chemical genomic data, comprising:

~~a)~~ providing a database in a computer readable medium comprising at least the following four data types: (i) profile information comprising a representation of the expression level of a plurality of genes in a cell exposed to a standard compound; (ii) bioassay information; (iii) gene information; and (iv) compound information for each of the plurality of standard compounds; wherein the information in any of the data types may be accessed through a query in any other data type;

~~b)~~ selecting at least a first database record from any of the data types;

and

~~c)~~ determining and displaying correlation information related to the selected first database record;

~~d)~~ selecting at least a second database record from the correlation information, wherein the second database record is from a different data type than the first database record;

~~e)~~ determining and displaying product information associated with the second database record;

~~f)~~ selecting at least one product associated with the product information~~;~~ ~~wherein the product enables the user to test a hypothesis based on the correlation of the first and second database records~~.

2. (Currently Amended) The method of claim 1, wherein said correlation information is selected from the group consisting of: identification of one or more similar profiles ~~similar to said selected standard gene expression profiles~~, identification of one or more standard compounds that produce ~~a~~ similar profiles, identification of one or more genes modulated in ~~said~~ a profile or a similar profile, identification of a disease or disorder in which a plurality of the same genes are modulated in a similar fashion, identification of one or more compounds having similar physical and chemical properties as the standard compounds used to generate a ~~the~~ profile~~(s)~~, identification of one or more compounds having similar shapes, identification of one

or more compounds having similar biological activities, identification of one or more ~~a~~ genes or proteins having sequence similarity ~~to a selected gene or protein~~, identification of ~~a~~ one or more genes or proteins having a similar ~~known~~ function or activity, identification of one or more genes or proteins subject to modulation or control by the same standard compound(s), and identification of ~~a~~one or more genes or proteins that belongs to the same or a similar metabolic or signal pathway~~, and identification of a gene or protein belonging to similar metabolic or signal pathways~~.

3. (Currently Amended) The method of claim 1, wherein said ~~relevant~~ product ~~information~~ is selected from the group consisting of: ~~information regarding~~ a bioassay reagent useful for measuring activity of an identified enzyme, ~~information regarding~~ a compound useful as a positive control, information regarding a compound useful as a negative control, ~~information regarding~~ a kit for purifying an identified protein, ~~information regarding~~ antibodies for determining and/or isolating substances, ~~information regarding~~ a test compound useful for further study, additional data regarding a gene's or protein's function and/or relationships, sequence data from other species, information regarding metabolic and/or signal pathways to which ~~the~~ a gene or protein belong, ~~information regarding~~ a DNA microarray useful for determining expression of ~~the~~ a gene and/or related genes, and information and analysis regarding features of a compound that are likely to be responsible for the observed activity.

4. (Currently Amended) The method of claim ~~3~~1, wherein ~~said~~ displaying product information further comprises providing a hyperlink that facilitates direct purchase of a product identified by the product information.

5. (Previously Presented) The method of claim 1, wherein said database further comprises drug signatures for a plurality of standard compounds, wherein each said drug signature comprises a representation of the physical and chemical characteristics of each compound, data regarding the effect of each compound on the transcription of a plurality of genes, data regarding the effect of each compound on a plurality of proteins and bioassay data regarding the in vivo effect of each compound.

6. (Previously Presented) The method of claim 1, wherein the first database record selected is

a standard gene expression profile selected on the basis of its similarity to an experimental expression profile provided by the user.

7. (Currently Amended) A method for analyzing chemical genomic data, comprising:

a) providing a database in a computer readable medium comprising drug signatures for each of a plurality of compounds, wherein said drug signatures comprise at least the following data types: (i) a representation of the physical and chemical characteristics of ~~each~~ the compound; (ii) data regarding the effect of ~~each~~ the compound on the transcription of a plurality of genes; (iii) data regarding the effect of ~~each~~ the compound on a plurality of proteins; and (iv) bioassay data regarding the in vivo effect of ~~each~~ the compound; wherein the information in any of the data types may be accessed through a query in any other data type;

b) selecting at least one drug signature;

c) determining and displaying correlation information related to at least one data type of said selected drug signature;

d) selecting at least a second drug signature based on the correlation information;

e) determining and displaying product information associated with the second drug signature;

f) selecting at least one product associated with the production information; ~~wherein the product enables the user to test a hypothesis based on the correlation of the first and second drug signatures~~.

8. (Currently Amended) The method of claim 7, wherein said ~~relevant~~ product ~~information~~ is selected from the group consisting of: ~~information regarding~~ a bioassay reagent useful for measuring activity of an identified enzyme, ~~information regarding~~ a compound useful as a positive control, ~~information regarding~~ a compound useful as a negative control, ~~information regarding~~ a kit for purifying an identified protein, information regarding antibodies for determining and/or isolating substances, ~~information regarding~~ a test compound useful for further study, additional data regarding a gene's or protein's function and/or relationships, sequence data from other species, information regarding metabolic and/or signal pathways to which ~~the~~ a gene or protein belong, ~~information regarding~~ a DNA microarray useful for determining expression of

~~the~~ a gene and/or related genes, and information and analysis regarding features of a compound that are likely to be responsible for the observed activity.

9. (Currently Amended) The method of claim 87, wherein ~~said~~ displaying product information further comprises providing a hyperlink that facilitates direct purchase of a product identified by the product information.

10. (Currently Amended) A system for analyzing chemical genomic data, comprising:

a computer readable medium having encoded thereon a database ~~in a computer readable medium~~ comprising at least the following four data types: (i) profile information comprising a representation of the expression level of a plurality of genes in a cell exposed to a standard compound; (ii) bioassay information; (iii) gene information; and (iv) compound information for each of the plurality of standard compounds; wherein the information in any of the data types may be accessed through a query in any other data type;

a computer readable medium having encoded thereon a set of instructions for:

(i) ~~input means for accepting~~ user data input~~and user selections~~;

(ii) user selection of ~~means for selecting~~ at least a first database record from any of the data types;

(iii) ~~means for identifying~~display and user selection~~ng~~ of correlation information related to said selected first database record;

(iv) ~~selection means for~~ user selection~~ng~~ of at least a second database record related to said first database record;

(v) ~~means for identifying~~ display of product information associated with said second database record;

and

(vi) ~~means for~~ user selection~~ng~~ of at least one product associated with the product information.

11. (Previously Presented) The system of claim 10, wherein said database further comprises drug signatures for a plurality of compounds, wherein each said drug signature comprises a representation of the physical and chemical characteristics of each compound, data regarding the

effect of each compound on the transcription of a plurality of genes, data regarding the effect of each compound on a plurality of proteins, and bioassay data regarding the *in vivo* effect of each compound.

12. (Currently Amended) A system for analyzing chemical genomic data, comprising:

a computer readable medium having encoded thereon a database comprising drug signatures for each of a plurality of compounds, wherein each said drug signature comprises at least the following data types: (i) a representation of the physical and chemical characteristics of ~~each~~ the compound; (ii) data regarding the effect of ~~each~~ the compound on the transcription of a plurality of genes; (iii) data regarding the effect of ~~each~~ the compound on a plurality of proteins; and (iv) bioassay data regarding the in vivo effect of ~~each~~ the compound; wherein the information in any of the data types may be accessed through a query in any other data type;

a computer readable medium having encoded thereon a set of instructions for:

(i) user data input ~~means for accepting data and user selections~~;

(ii) user selection ~~means for selecting~~of at least one drug signature;

(iii) ~~means for identifying~~display and user selection~~ng~~ of correlation information related to at least one data type of said selected drug signature;

(iv) ~~means for~~user selection~~ng~~ of at least a second drug signature based on the correlation information;

(v) ~~means for identifying~~display of product information associated with the second drug signature;

and

(vi) ~~means for~~user selection~~ng~~ of at least one product associated with the product information.

13. – 16. (Cancelled)

17. (Withdrawn) A method for evaluating a test compound, comprising:

a) providing a database in a computer readable medium comprising a plurality of standard gene expression profiles, each profile comprising a representation of the expression level of a plurality of genes in response to a standard compound,

bioassay profiles and compound information for each of the standard compounds;

b) providing a test compound gene expression profile;

c) scoring the similarity of said test compound gene expression profile to the plurality of standard gene expression profiles in the database and thereby identifying at least one standard compound in the database similar to the test compound;

d) using correlation information related to the identified standard compound to predict a biological activity of the test compound.

18. (Withdrawn) The method of claim 17 wherein the bioassay profiles comprise data from screening assays, cellular assays, binding assays, enzymatic assays, animal studies and/or human studies.

19. (Withdrawn) The method of claim 17 wherein the bioassay profiles comprise data regarding the in vivo effect of each standard compound.

20. (Withdrawn) The method of claim 17 wherein the biological activity of the test compound is selected from the group consisting of drug activity, toxicity, absorption, metabolism, distribution and excretion.

21. (Withdrawn) The method of claim 17 wherein each of the plurality of standard gene expression profiles comprises a representation of the expression levels of a plurality of genes in response to the *in vivo* effect of a standard compound.

22. (Withdrawn) The method of claim 17 wherein each of the plurality of standard gene expression profiles comprises a representation of the expression levels of a plurality of genes in a particular tissue in response to the *in vivo* effect of a standard compound.

23. (New) The method of claim 3, wherein the selected product is a DNA microarray.

24. (New) The method of claim 8, wherein the selected product is a DNA microarray.